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**ON THE NON-RANDOM
DISTRIBUTION OF
EDUCATIONAL DEPRIVATION OF
CHILDREN IN INDIA**

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ABSTRACT

The emphasis on education assumes importance given the recent recognition of human capital, human rights and human development perspectives of development. Hence educational deprivation is recognised as the primary agent of human deprivation and all necessary measures are required to ensure minimum education for every child. Such a universal recognition emanates from the given magnitude of educationally deprived children all around the world. On this premise, this is an attempt at examining the levels and inequities associated with the phenomenon of educational deprivation of children during 1990's in India. This exercise provides a detailed exposition of the household characteristics of the deprived children based on information obtained in National Sample Survey Organisation (NSSO).

The persistence of educational deprivation among children in India is due to socio-economic deprivation in general; however, it remains debatable but whether the remedy lies in making the schooling provision universal. This paper argues that the provision may be necessary but not a sufficient condition to accomplish the dream goal of universal elementary education. Alternatively it argues for a greater role of the state to ensure the enabling conditions in the household domain; in other words, the state has the responsibility of ensuring the well-being of all children on an equal footing. The state's responsibility is of equal importance of that of the parents.

Key Words: India, Deprivation, Educationally Deprived Children, and Child Labour, Educational Inequalities, Group Inequalities.

JEL Classification : I 2, I 20, I 28, R 12, J 21, J 23

I. Introduction

Normative theories of social arrangements emphasised on the freedom, equality and justice in social order in the society¹. Among these the most influential in 20th century is John Rawls' "Theory of Justice". It proposes the universal access to what is called 'social primary goods' (like liberties, opportunities, self-respect etc.,) for all individuals in the society equally². One of the important primary good, though not explicit in his theory but implicit, that has to be ensured to every citizen of the society is education (see Bojer, 2004). Moreover, it assumes primary significance in the perspectives of human capital, human development and human rights, the educational deprivation of children can have severe negative implications³. But the crude reality is that even today many children in the developing society are deprived of the opportunity to schooling. In this context, an attempt is made in this paper to scale the levels of the educational deprivation of children, inequalities involved across social groups and its associated factors in India.

In India, since Independence there have been several policy measures towards educational development in general and child schooling in particular with constant emphasis on elimination of child labour⁴. In keeping with the Constitutional commitment and the state policy pronouncements that followed, Planning Commission, different

Committees/Commissions on education set target dates, each of setting new target data, for achieving the goal of universal elementary education. The goal still remains elusive. Though the progress in this direction cannot be disclaimed, the pace has been tardy and halting. According to Census 1991 there were 105 million children comprising 45 per cent of the child population (209 million) in the age group 5-14, who remained out of school (Census of India, 1999). NSSO 1999-2000 estimations (by their usual principal activity) show that the number came to around 62 million and that the incidence was 28 per cent (out of total estimated number of 228 million children). Moreover, this phenomenon is disparate in terms of gender, poverty status, caste, location and occupation. There exist wide variations across states with respect to levels of incidence. As a consequence, it has been observed that, lack of human capital was the crucial factor which made it impossible to realise the expected results of several economic reforms implemented in India from time to time.

The present paper provides the estimates of the levels of educational deprivation of children across states for the time points 1993-94 and 1999-2000. The 1990s had its own significance in terms of both economic policy initiatives and initiatives in educational policy. Besides, the paper presents the information on the household characteristics of the educationally deprived children in India. Finally, based on the empirical evidence and theoretical reasoning, our discussion would draw a few conclusions relevant for policy formulation. A major limitation of the exercise is that it examines only the factors associated with the inadequacy of demand for schooling. Though we are not unmindful of the supply factors, an analysis of them is beyond the scope of this paper.

The paper is organised in the following manner. Section II delineates the conceptual framework for understanding the educational deprivation of children. The sources of data used in the analysis and the measures of prevalence of educational deprivation of children are also dealt within this section. The third section elaborates on the levels and disparities in the incidence of educational deprivation of children across

the states. In the fourth section the household characteristics of the educationally deprived children are examined. The policy implications of the conclusions drawn in the discussion are highlighted in the final (fifth) section.

II. Methodology and Data Source

a. Conceptual Framework

It is often argued that as most of the out-of-school children are at work, all out-of-school children are to be considered as child labourers (see Sinha, 2000). Since there are inherent characteristics which differentiate child labour from out-of-school children, such propositions are difficult to accept (see Lieten, 2000 & 2002; Venkatanarayana, 2004a&b). Given the considerations- raised in Venkatanarayana (2004a&b)⁵ (and on the basis of the normative approach by which every child should be in school and he/she should work-free⁶), we redefine all those out of school children as educationally deprived children rather than as child labourers.

b. Analytical Framework

We follow the supply-demand framework to examine the phenomenon of educational deprivation of children. It implies that the levels of child schooling of the region/state/nation depend upon the supply and demand factors with respect to schooling. In other words, the phenomenon of educational deprivation of children may be said to arise out of the inadequate demand⁷ for and/or inadequate supply of schooling. Demand, in general, arises out of willingness and affordability and these in turn depend upon the perceived values of education and the costs (both direct and indirect) of schooling. All these, ultimately, depend on the socio-economic conditions at the household level. The supply⁸ of schooling may be seen in terms of the availability and quality of and access to schooling. The supply of schooling, albeit a necessary factor is not a sufficient condition for increase in the levels of schooling. The

socio-economic conditions at the household level are quite crucial in raising the demand for child schooling (Krishnaji, 2000).

c. Data Source

The data source for the analysis constitute the National Sample Survey Organisation (NSSO) 50th (1993-94) and the 55th round (1999-2000) unit records. NSSO Employment and Unemployment Surveys record the activity status of all persons covered in the survey and their individual characteristics like age and sex. They also provide household characteristics of the persons in terms of demographic and other variables related to economic aspects of the households concerned. They also supply the information on the current attendance status in educational institutions for all persons below 30 years of age. The surveys carried in all the states of India are based on the method of stratified random sampling. In the present exercise we have used only the Central Sample data. For the 55th round, the estimations were based on both the visits that the NSSO had made. We used the ‘principal usual activity’ status of children in the age group 5-14 years and their household characteristics. In fact, *usual status* considers the activity status of a person during the 365 days immediately preceding the date of interview so that principal activity considers the activity for the major part of the year. The current status in educational attendance considers whether persons especially of below 30 years age were attending any educational institution during the week preceding the survey. Therefore, the current attendance status does not ensure, whether the child was in school throughout the year. It is only the usual status especially with regard to the principal activity status that would reflect whether the child was in school for the major part of the year. Hence, we consider only the principal usual activity of children for defining out-of-school children.

d. Measures of Prevalence and Dispersion

In the development literature especially that of human development, considerable efforts are made to develop aggregate indices of human

development or capability deprivation while assessing human well being. The recognition of widespread prevalence of inequalities in the distribution of human progress or deprivation across various population groups according to their socio-economic characteristics, has led to developing group-differentiated indices to unravel the depth and varied dimensions of deprivations (see Anand and Sen, 1995; Jayraj and Subramanian, 1999; Majumdar, 1999; Hicks 1997). It is obvious that such burden of deprivation is borne disproportionately by different group.

Here, the severity of educational deprivation among children is measured in terms of a *deprivation index* that is a ratio of number of children out of school in the age group 5-14 to the total child population in this age group. To account for the group-inequality, following the methodology of Anand and Sen used Human Development Report 1997⁹ (see HDR, 1997), we have computed the group-inequality-adjusted index of deprivation. And then while analysing the change during the period 1990's we have decomposed the change into three components: change due to change in the mean, due to that of group-inequality and the interaction of the both (see Appendix I for the methodology).

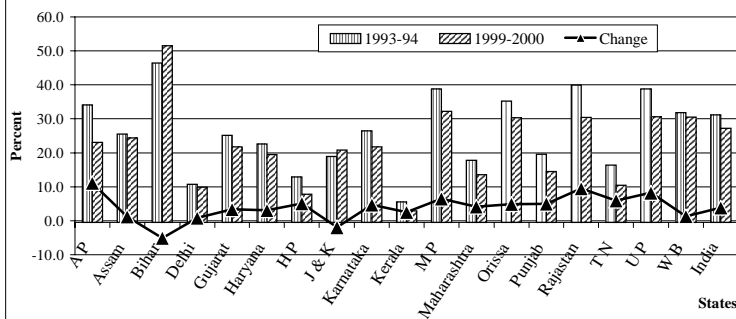
In addition, following Jayaraj and Subramanian (2002), who have used the *relative disadvantage index* (RDI) to highlight dispersion of the burden of deprivation across the sub-population groups differing by their household characteristics (i.e. head of the household, literacy status, caste, religion, income level, occupation and size of the landholding size). This measure takes into account the representation of each group in terms of its share in child population and total deprived children. It identifies socio-economic group who bears the burden of deprivation more than their share (see Appendix for the method). The positive sign of the index indicates that a particular group is relatively disadvantaged and the negative sign indicates that the group in question is relatively advantaged (see Jayaraj and Subramanian, 2002).

III. The Levels and Change in the Incidence

After 50 years of the Constitutional promise of universalisation of elementary education, *there remain about one fourth of the children in the age group 5-14 out of school*. As per NSSO (1999-2000), the estimated number of educationally deprived children is 62 million comprising 27.3 per cent of total estimated child population (228.6 million). The incidence of educational deprivation has shown a decline of about 4 percentage points between the period 1993-94 and 1999-2000 (i.e. from 31 to 27 percent).

India is not a homogenous country especially in terms of its socio-economic development across sub-population groups differing by their spatial and socio-economic characteristics. There are wide variations across states. While Kerala is having the lowest levels of deprivation Bihar is at the other extreme (followed by fellow BIMARU states – Madhya Pradesh, Rajasthan and Uttar Pradesh) having the highest levels (see Figure I). Interestingly, even West Bengal, which claims to have a progressive political regime, the levels of educational development especially child schooling are on the pattern of those in the BIMARU states.

Figure I: Incidence of Educational Deprivation of Children Across Major Indian States: NSSO (1993-94 and 1999-2000) 50th and 55th Round



As regards change in terms of the decline in the incidence of deprivation over the period 1993-94 and 1999-2000 across states, most of the states show a positive change of decline except Bihar, and Jammu and Kashmir. The extent of decline reckoned in terms of percentage points during the given period has been the highest in Andhra Pradesh and the lowest in Delhi and West Bengal (see Figure I). Interestingly, Andhra Pradesh is the one of the major Indian states that had incidence above the national average in 1993-94; the incidence dramatically reduced to below the national average by 1999-2000. *The rate of decline in the level of deprivation has been sharp in Andhra Pradesh, Uttar Pradesh, Madhya Pradesh and Rajasthan (AP, UP, MP and Rajasthan) which had high levels of deprivation in 1993-94.*

The above analysis is about the aggregate levels of the incidence. As we mentioned above aggregates always conceals the distribution more than it reveals. Attempts were made to see the aggregate index reflect the extent of group inequality across sub-population group differing by their socio-economic character. The recent literature concentrated on these aspects (see Majumdar and Subramanian, 2001). Given the importance of gender (male/female), caste (SC/ST and Others) and location (rural/urban) in Indian context, we categorised children into eight mutually exclusive sub-population groups based on these characteristics¹⁰. Table 1 presents the levels in educational deprivation of children and change during the 1990's across the social groups.

We can summarise the observations in the following manner. *Firstly*, the incidence levels vary across the social groups where the relatively highest incidence is found for children of underprivileged social groups. *Secondly*, over the period, the change in terms of decline in the incidence is relatively the highest in the groups, which are identified with the highest incidence in initial period (i.e. 1993-94). *Thirdly*, though remarkable change is observed for underprivileged group, the ranking of the group remained intact and there still remains a significant level of variation across these sub-population groups. *Fourthly*, among the three

Table 1: The Level and Change in the Incidence of Educational Deprivation of Children Across Social Groups in India: NSSO

| Sn | Social Groups | The Level and Change | | | Ranking | | |
|----|---------------------|----------------------|---------|--------|---------|---------|--------|
| | | 1999-00 | 1993-94 | Change | 1999-00 | 1993-94 | Change |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | Rural SC/ST Female | 43.1 | 55.5 | 12.4 | 1 | 1 | 1 |
| 2 | Rural Others Female | 33.0 | 39.0 | 6.0 | 2 | 2 | 2 |
| 3 | Rural SC/ST Male | 31.4 | 37.3 | 5.9 | 3 | 3 | 3 |
| 4 | Urban SC/ST Female | 25.6 | 30.6 | 4.9 | 4 | 4 | 4 |
| 5 | Rural Others Male | 22.6 | 24.4 | 1.7 | 5 | 5 | 6 |
| 6 | Urban SC/ST Male | 19.4 | 21.3 | 1.9 | 6 | 6 | 5 |
| 7 | Urban Others Female | 16.3 | 16.9 | 0.6 | 7 | 7 | 7 |
| 8 | Urban Others Male | 13.0 | 12.9 | -0.1 | 8 | 8 | 8 |
| | Total | 27.3 | 31.2 | 3.9 | - | - | - |

Note: 1. Figures refer to children of 5-14 age group; **2.** Col 6 and 7 refers to ranking in terms of levels where the lowest number (i.e.1) indicates highest levels of deprivation; **3.** Col 8 refers to ranking with respect to change where the lowest number indicates relatively highest change over the period.

Source: Estimations Using unit record data of NSSO (1993-94 and 1999-2000) 50th and 55th Rounds Employment and Unemployment Survey.

Table 2: Difference in the Levels of Educational Deprivation by Gender, Caste and Location

| Group | Gender | | Group | Caste | | Group | Location | |
|----------|---------|---------|-------|---------|---------|----------|----------|---------|
| | 1993-94 | 1999-00 | | 1993-94 | 1999-00 | | 1993-94 | 1999-00 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| R SC/ST | 11.7 | 18.2 | R F | 10.1 | 16.5 | SC/ST F | 17.5 | 24.9 |
| R Others | 10.4 | 14.6 | R M | 8.8 | 12.9 | SC/ST M | 12.0 | 16.0 |
| U SC/ST | 6.2 | 9.3 | U F | 9.3 | 13.7 | Others F | 16.7 | 22.1 |
| U Others | 3.3 | 4.0 | U M | 6.4 | 8.4 | Others M | 9.6 | 11.5 |

Note: 1. Figures refer to difference in deprivation levels in percentage points.

Source: Calculated based on the figures presented in col. 3 and 4 in the above Table (1).

Table 3: The Incidence (Head Count and Inequality Adjusted) of Educational Deprivation of Children across Indian States: NSSO (1993-94 and 1999-2000) 50th and 55th Round

| Sn | States | 1999-2000 | | 1993-94 | | Change | | Change Due to | | |
|----|------------------|-----------|----------|---------|----------|--------|----------|---------------|------------|-------------|
| | | H | Adjusted | H | Adjusted | H | Adjusted | Mean | Inequality | Interaction |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1 | Andhra Pradesh | 23.1 | 24.6 | 34.2 | 36.9 | 11.1 | 12.3 | 0.5 | 10.8 | 0.2 |
| 2 | Assam | 24.4 | 24.9 | 25.7 | 26.0 | 1.3 | 1.1 | -0.1 | 1.3 | 0.0 |
| 3 | Bihar | 51.2 | 52.7 | 46.4 | 48.7 | -4.8 | -4.0 | 1.2 | -6.1 | -0.1 |
| 4 | Gujarat | 21.8 | 23.6 | 25.2 | 27.2 | 3.4 | 3.6 | -0.1 | 3.5 | 0.0 |
| 5 | Haryana | 19.5 | 21.7 | 22.6 | 25.0 | 3.1 | 3.3 | -0.1 | 3.2 | 0.0 |
| 6 | Himachal Pradesh | 7.7 | 8.1 | 12.9 | 13.8 | 5.2 | 5.7 | 0.3 | 5.0 | 0.1 |
| 7 | Jammu & Kashmir | 20.9 | 25.3 | 19.0 | 21.4 | -1.9 | -3.9 | -0.8 | -1.1 | 0.1 |
| 8 | Karnataka | 21.8 | 22.8 | 26.5 | 28.5 | 4.7 | 5.7 | 0.6 | 4.2 | 0.1 |
| 9 | Kerala | 3.0 | 3.1 | 5.6 | 6.0 | 2.6 | 2.9 | 0.2 | 2.5 | 0.1 |
| 10 | Madhya Pradesh | 32.2 | 34.5 | 38.8 | 42.6 | 6.6 | 8.1 | 0.8 | 5.9 | 0.1 |

Cont'd.....

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----|---------------|------|------|------|------|-----|------|------|-----|------|
| 11 | Maharashtra | 13.5 | 15.0 | 17.7 | 19.6 | 4.2 | 4.6 | -0.1 | 4.3 | 0.0 |
| 12 | Orissa | 30.3 | 32.4 | 35.3 | 38.2 | 5.0 | 5.8 | 0.4 | 4.7 | 0.1 |
| 13 | Punjab | 14.3 | 15.7 | 19.5 | 22.9 | 5.2 | 7.2 | 1.1 | 4.4 | 0.3 |
| 14 | Rajasthan | 30.4 | 34.4 | 39.9 | 45.8 | 9.5 | 11.4 | 0.5 | 9.1 | 0.1 |
| 15 | Tamil Nadu | 10.4 | 10.7 | 16.5 | 17.7 | 6.1 | 7.0 | 0.7 | 5.6 | 0.3 |
| 16 | Uttar Pradesh | 30.6 | 31.6 | 38.8 | 41.1 | 8.2 | 9.5 | 0.8 | 7.6 | 0.2 |
| 17 | West Bental | 30.4 | 31.2 | 31.8 | 33.0 | 1.4 | 1.8 | 0.3 | 1.1 | 0.0 |
| 18 | Delhi | 9.9 | 11.9 | 10.7 | 12.3 | 0.8 | 0.4 | -1.2 | 1.9 | -0.1 |
| | India | 27.2 | 28.6 | 31.2 | 33.5 | 4.0 | 4.9 | 0.6 | 3.4 | 0.1 |

Note: 1. Figures refers to children of 5-14 age group; **2.** H- unadjusted deprivation index analogous to head count ratio of poverty; **3.** Adjust- Social group-inequality adjusted deprivation index; **4.** Change refers to the change in the incidence between 1993-94 and 1999-00 where positive value indicates the decline and the negative indicates an increase.

Source: Our estimations using unit record data of NSSO (1993-94 and 1999-2000) 50th and 55th Rounds Employment and Unemployment Survey.

characteristics (location, caste and gender), the difference according to each of the attribute while keeping the rest two attributes fixed, is significant and the difference in each attribute (for instance gender) varies with the other two attributes (location and caste) (see Table 2).

Fifthly, it seems the location effect dominates the gender and caste effect with respect to the educational deprivation of children. To say this Table 2 provides the evidence where the keeping caste and gender intact the difference between rural and urban children is relatively highest than keeping location and caste (or gender) in tact while looking into the difference between gender (or caste) groups.

Based on the above understanding of differences in educational deprivation across groups, we go a step forward in terms of computing a deprivation index adjusted for group inequality on lines of the methodology proposed by Anand and Sen (1997) used in Human Development Report (1997). The change during the 1990's evaluated in terms of this index is further decomposed into three components: the change in mean, change in group-inequality and the interaction terms. Table 3 presents the levels (both group-inequality adjusted and unadjusted) of educational deprivation of children across states and the observed change during the study period.

It is observed that the values of adjusted index are relatively higher compared with the index of deprivation prior to adjustment, across states for the both time points. The rank holders of the States according to their index values before and after the adjustment varied in the case of a few states and was unchanged for others. And also the change during the period is relatively larger based on the adjusted index values when compared with change assessed with the index without adjustment. The decomposition of change during the period 1990's indicates a lion's share of the change owed to the inequality component across states.

IV. Household Characteristics of Deprived Children

Household is the basic decision-making unit for schooling of children. Therefore, household characteristics are of prime relevance in

determining the schooling opportunities of children. A few clarifications are required, however, before we take up the analysis. *Firstly*, in this analysis, we have used indicators like relative share of child population, of deprived children, of the incidence of educationally deprived children and the relative disadvantage index. The relative shares imply that the proportion of children (child population or deprived children) belonging to households with a particular characteristic to the total. It indicates whether the deprived children in any particular characteristic household are over- or under-represented. The incidence implies the percentage of deprived children to the child population. It presents the group-specific incidence i.e. for the group of households with a particular characteristic. *Secondly*, the relative disadvantage index is constructed for sub-population groups by their social group characteristics such as location, gender, and caste following Jayaraj and Subramanian (2002), as mentioned in the methodology section.

Head of the Household: It is found that around 8 per cent of the child population in the rural and 7 percent in the urban areas belong to female-headed households (see Table 4). The relative shares of child population and deprived children indicate that female-headed households in urban areas are over-represented with respect to deprivation. Moreover, the incidence of deprivation is higher in the female-headed households than in their counterparts. And the relative disadvantage index confirms that the children residing in female-headed households in urban areas are relatively the most disadvantaged in terms of education. In rural areas it is the other way round and that children belonging to female-headed households do not have such relative disadvantage.

Adult Literacy: It is said that a household with at least a literate better off than households with all members illiterate¹¹ thanks to the positive externality of education (see Basu and Foster, 1998; Basu et al, 1999). Illiteracy and ignorance limit access to available information, a constraint which is reflected in their way of life and living. Similarly,

**Table 4 : Household Characteristics of the Educational Deprivation of Children By Location : All India,
NSSO (1999-2000) 55th Round**

| Household Characteristics | Relative Share of | | | | Incidence of Deprivation | | Relative Disadvantage Index | |
|---------------------------------|-------------------|-------|-------------------|-------|--------------------------|-------|-----------------------------|--------|
| | Child Population | | Deprived Children | | | | | |
| | Rural | Urban | Rural | Urban | Rural | Urban | Rural | Urban |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Head of the Household | 100 | 100 | 100 | 100 | - | - | - | - |
| Male | 92.2 | 93.3 | 92.9 | 91.9 | 30.8 | 15.9 | 0.090 | -0.209 |
| Female | 7.8 | 6.7 | 7.1 | 8.1 | 27.9 | 19.4 | -0.040 | 0.040 |
| Adult Literacy | 100 | 100 | 100 | 100 | - | - | - | - |
| All Illiterate | 32.9 | 13.5 | 53.5 | 38.6 | 49.9 | 46.5 | 0.307 | 0.356 |
| At least one adult is Literate | 67.1 | 86.5 | 46.5 | 61.4 | 21.3 | 11.5 | -0.626 | -1.713 |
| Adult Female Literacy | 100 | 100 | 100 | 100 | - | - | - | - |
| All Females Illiterate | 63.4 | 33.0 | 83.6 | 68.5 | 40.3 | 33.3 | 0.552 | 0.510 |
| At least one female is Literate | 36.6 | 67.0 | 16.4 | 31.5 | 13.7 | 7.6 | -0.319 | -1.020 |
| Religion | 100 | 100 | 100 | 100 | - | - | - | - |
| Hindu | 82.4 | 74.6 | 80.0 | 66.0 | 29.7 | 14.3 | -0.136 | -0.339 |

Cont'd.....

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-------------------------|------|------|------|------|------|------|--------|--------|
| <i>Hindu Excl SC/ST</i> | 52.3 | 57.0 | 42.5 | 40.1 | 24.9 | 11.4 | -0.205 | -0.393 |
| Muslim | 13.0 | 19.6 | 17.3 | 31.5 | 40.6 | 26.0 | 0.146 | 0.148 |
| Christian | 1.8 | 2.3 | 1.1 | 0.8 | 18.7 | 5.7 | -0.171 | -0.125 |
| Others | 2.8 | 3.5 | 1.6 | 1.6 | 17.8 | 7.5 | -0.189 | -0.104 |
| Caste | 100 | 100 | 100 | 100 | - | - | - | - |
| ST | 11.2 | 4.2 | 15.1 | 5.5 | 41.2 | 21.4 | 0.154 | 0.059 |
| SC | 21.8 | 16.3 | 24.7 | 22.9 | 34.7 | 22.6 | 0.059 | 0.079 |
| OBC | 36.9 | 32.7 | 37.5 | 37.0 | 31.1 | 18.3 | 0.010 | 0.064 |
| Others | 30.1 | 46.9 | 22.7 | 34.6 | 23.1 | 11.9 | -0.108 | -0.232 |
| MPCE Quintiles | 100 | 100 | 100 | 100 | - | - | - | - |
| 1- Bottom 20 % | 29.0 | 33.9 | 41.6 | 64.3 | 43.9 | 30.6 | 0.192 | 0.460 |
| 2 | 24.4 | 25.4 | 26.3 | 20.1 | 32.9 | 12.8 | 0.034 | -0.071 |
| 3 | 19.9 | 17.5 | 17.2 | 9.4 | 26.3 | 8.7 | -0.060 | -0.098 |
| 4 | 15.5 | 13.3 | 10.5 | 4.1 | 20.7 | 5.0 | -0.142 | -0.133 |
| 5 – Top 20 % | 11.2 | 9.9 | 4.6 | 2.0 | 12.4 | 3.2 | -0.260 | -0.153 |

Note: **1.** Figures refers to the children in the 5-14 age group; **2.** Child population ratio is the ratio of children to the total population; **3.** Data presented in col. 2-9 are percentages and 10-11 is a normalised index; **4.** The incidence level in urban area is 16.1 percent and that of rural areas is 30.6 per cent.

Source: Estimations from NSSO 1999-2000 (55th Round) Employment and Unemployment Survey, unit record data.

literacy status of the household (particularly literacy status of the parents of the school age children) is a significant factor in influencing educational deprivation of children, (Burgohain, 1997). The impact of parental literacy may be seen in two ways: earning capability and valuation of education (Brown et al, 2003). Literate parents do possess the human capital essential for having relatively better earning capability and hence ability to finance their children's schooling. The valuation of education especially for their children is higher in case of literate parents. Thus, illiteracy and ignorance of parents disable them from realising the positive value of education in their children's lives.

Accordingly, the literacy status, especially of adult (15+age) members, of the households has remarkable impact on educational deprivation of children in these households. Here we have taken into account any member (15+ age) of the household, may be parents, brothers/sisters or relatives. In most of the cases, families are nuclear ones where parents and their children alone live in the household. The incidence of deprivation differs significantly between households where all adult members are illiterate and those having at least one adult member literate. This holds true for both rural and urban areas (see Table 4). Similarly, in relation to female literacy status, the majority of the deprived children (84 per cent in rural areas and 69 per cent in urban areas) are found in the households in which all female adults are illiterate. The relative disadvantage index confirms that *children belonging to such households (those of all illiterate adult members in general and all illiterate female adults in particular) are relatively disadvantaged in terms of education. The degree of disadvantage is high when all female adults are illiterate.*

Caste and Religion: In India, social group (in terms of caste) status has its roots in her history. For the analysis of social group inequality, it is the SC and ST communities that are often considered. Already it was shown that children belonging to SC and ST communities are

relatively disadvantaged in terms of education. NSSO (1999-2000) 55th round survey has recorded information on other Backward Classes (OBC) too. The incidence of educational deprivation of children across social groups indicates that it is the highest for ST children followed by SC and OBCs whereas it is the lowest in the category of 'Others' (see Table 4). As regards religion, the incidence of child deprivation is the highest among Muslim children in both the rural and the urban areas and the incidence is higher than of even the even STs (see Table 4). Therefore, *Muslims children are the most disadvantaged in terms of education; their position is even worse than that of ST children.*

Monthly Per Capita Expenditure (MPCE): Poverty is often cited as a factor inducing child labour. There exists a substantial literature, which either supports or contends the causal relationship between poverty and child labour¹². Though there is disagreement on the hypothesis that poverty is the only factor that affects child labour or child deprivation, it is agreed, in general, that it is an important factor. In Table 4, quintile classes formed based on monthly per capita expenditure (MPCE) of the household are shown. The expenditure level is considered proxy for income level. The figures in the Table refer to the share of child population for each quintile in the age group of 5-14 years and the share of deprived children in this age group. Also the incidence levels and relative disadvantage of children in each class with respect schooling are presented. It is seen that the relative share of child population and deprived children increase from the highest (5th) to the lowest (1st) quintile classes in that order. Thus the average number of children (age group 5-14) and of educationally deprived children per household are the highest in the households belonging to the lowest quintile class and the lowest in highest quintile class. In other words the two are inversely related. Thus the data show that *there exists a systematic negative relationship between the incidence of educational deprivation across expenditure classes in both the rural and the urban areas.*

Table 5: Occupational Characteristics of the Households and the Educational Deprivation of Children in India: NSSO 50th and 55th Rounds

| Occupation of the Household | | Relative Share of | | | | Incidence | | | Relative Disadvantage | |
|-----------------------------|----------------------------------|-------------------|---------|-------------------|---------|-----------|---------|--------|-----------------------|---------|
| | | Child Population | | Deprived Children | | | | | | |
| | | 1999-2000 | 1993-94 | 1999-2000 | 1993-94 | 1999-2000 | 1993-94 | Change | 1999-2000 | 1993-94 |
| 1 | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Rural | Self Employed in Non-agriculture | 14.7 | 13.5 | 13.5 | 11.6 | 28.0 | 30.6 | 2.7 | -0.038 | -0.078 |
| | Agricultural Labourers | 30.7 | 27.7 | 39.8 | 36.1 | 39.6 | 46.4 | 6.8 | 0.131 | 0.167 |
| | Other Rural Labourers | 7.5 | 7.6 | 7.8 | 8.0 | 32.0 | 37.5 | 5.5 | 0.020 | 0.029 |
| | Self Employed in Agriculture | 35.8 | 41.5 | 32.2 | 38.2 | 27.5 | 32.8 | 5.4 | -0.057 | -0.056 |
| | Other Rural Labourers | 11.2 | 9.7 | 6.7 | 6.1 | 18.3 | 22.5 | 4.2 | -0.177 | -0.205 |
| | | | | | | | | | | |
| Urban | Self-Employed | 41.1 | 39.0 | 44.9 | 44.9 | 17.6 | 19.1 | 1.4 | 0.065 | 0.097 |
| | RW/S E | 38.2 | 42.4 | 21.8 | 24.2 | 9.2 | 9.5 | 0.3 | -0.265 | -0.314 |
| | Casual Lab. | 15.2 | 13.3 | 29.1 | 27.2 | 31.0 | 33.8 | 2.8 | 0.177 | 0.207 |
| | Others | 5.5 | 5.3 | 4.1 | 3.6 | 12.0 | 11.4 | -0.6 | -0.050 | -0.062 |

Note: 1. Figures refer to Children in the age group 5-14; 2. Change in col. 8 indicates the percentage points decline in the incidence of educationally deprived children; 3. RW/SE – Regular Wage/Salaried Employees.

Source: Estimations using NSSO (1999-2000) 55th round and (1993-94) 50th Round unit record data.

Occupational Structure and the Educational Deprivation

The occupation of the household is one of the factors that influences its socio-economic status and thereby the possibilities of child schooling. Table 5 presents the occupational characteristics of the educationally deprived children in the rural and the urban areas. Between 1993-94 and 1999-2000, the incidence of deprivation is seen to have been declining in all the households irrespective of their occupational characteristics. In the rural areas the incidence is predominantly high in agricultural labour households followed by other rural labour households and self-cultivators; the relative disadvantage index shows that children from labour (both agricultural and other rural labour) households are relatively the most disadvantaged.

In urban areas high incidence is observed for children in casual labour households followed by households of the self-employed and 'others'. The lowest incidence is observed for the 'regular wage/salary earning' households. One may observe a difference in educational status children belonging to self-employed households as between rural and urban areas. In rural areas children of the self-employed households are relatively advantaged in terms of education whereas in the urban areas they are the relatively disadvantaged.

Agrarian Economy and Educational Deprivation of Children

Certainly, socio-economic conditions influence child well-being in general and child schooling in particular. As the majority of the population of India lives in rural areas and agriculture is the main source of livelihood for 70 per cent of the population, rural and agricultural development leave an impact either directly or indirectly on child schooling. There is an established relationship between the rural and agrarian nature of the economy and the phenomenon of educational deprivation of children. The problem of educational deprivation of children is primarily a *rural phenomenon* and it is a *product of the changing dynamics of the agrarian economy*. We observed (based on

Table 6: Educational Deprivation of Children and Size Class of Land Holding in Rural India: NSSO 1999-2000

| Size Class of (Cultivated) Land Holding | <i>Relative Share of</i> | | Incidence |
|--|--------------------------|----------------------|-------------|
| | Child Population | Deprived Children | |
| 1 | 2 | 3 | 4 |
| Landless | 35.7 | 38.5 | 33.0 |
| Agricultural Labourers | 16.2 | 22.3 | 42.0 |
| All Others | 19.4 | 16.2 | 25.5 |
| With Land (Cultivated) | 64.3 | 61.5 | 29.2 |
| Marginal | 39.3 | 40.2 | 31.3 |
| Small | 13.9 | 12.6 | 27.6 |
| Semi-Medium | 7.0 | 5.8 | 25.3 |
| Medium | 3.3 | 2.3 | 21.3 |
| Large | 0.6 | 0.4 | 20.6 |
| Total | 100 | 100 | 30.6 |

Note: 1. Figures refer to children of the age group 5-14; **2.** For the Size Class of Holding, Standard Classification is followed.

Source: Estimations derived from the NSSO (1999-2000) 55th Round Employment and Unemployment Survey, unit level record data.

NSSO 55th round) that out of the total child population (5-14 age group), 77 per cent reside in rural India and that their contribution to the total number of deprived children was as high as 86 per cent. The analysis of the relative disadvantage of children by their spatial and social group characteristics indicates that rural children are the most disadvantaged. In total, about 51 per cent of the child population belonged to households whose principal livelihood was agriculture (either as agriculture labour or self-cultivators) and the contribution of such households was about 62 percent of the deprived children. Within the rural areas, the share of child population and deprived children for the agriculture households were 66.6 per cent and 72.1 per cent respectively¹³. These figures indicates the fact indicating that agricultural households are over-represented among the deprived children when compared to their share in child population.

By size class of the land under cultivation a systematic negative relationship is observed (see Table 6). The incidence is high among children belonging to the landless households, particularly of the landless agricultural labour households. Among the households with possession of land, the incidence level declines as the size of the holding increases. It is also observed in the literature that the highest incidence of child labour is associated with the population working in agriculture (Castle et al, 2002). NCERT (1993-94) survey on human development in India shows that low enrolment rates were found among children of landless labourers and the enrolment rate increased with the size of the landholding¹⁴ (see NCERT, 1999). Thus, it is seen that the phenomenon of educational deprivation of children strongly with the agrarian economy¹⁵.

V. The Policy Perspective

Based on observations made above, one may conclude that educational deprivation of children is a consequence of multiple deprivations which could be summed up as the problem of insecurity¹⁶. In a given socio-cultural setting, economic factors like levels of income below subsistence might lead to child deprivation. Besides, the regularity of the income flow also contributes to children's non-attendance in school¹⁷ (see Jacoby and Skoufias, 1997). One of the factors affecting child schooling is the *cost of schooling* that includes both direct and indirect (including opportunity) cost. In terms of opportunity cost, the value of child work¹⁸ in an agrarian economy is not insignificant. It is said that child work is a strategy to minimise the risk of interruption of household income flow in the absence of savings, assets of their own or ability to borrow (Grootaert and Kanbur, 1995). It is true in the context of agrarian economy, the child labour is a peasant's adaptive strategy for survival (Jodha and Singh, 1991). In such situations, child labour is used as a social security and as a self-insurance strategy by poor households, not only to augment household income but also to encounter the threat of income vulnerability that the poor households face.

As a matter of fact, children work for two economic reasons: *Firstly*, out of compulsion due to poor economic conditions in the households in which children's contribution in terms of their labour (monetary terms-earnings, or physical terms-supplementing the family labour) necessitates means of survival. *Secondly*, owing to lack of an alternative opportunity i.e. schooling, they work by default (Bhatty, 1998). The latter could be either due to lack of availability of or access to school or to affordability of schooling costs, and parents' level of satisfaction with the quality of schooling. Apart from the problem of physical access, the problem of direct costs which parents have to incur costs (like books, stationery, uniform etc) while sending their wards to school also is a deterrent. And as a consequence, the constitutional provision of 'free' elementary education became a rhetoric rather than a reality for the poor¹⁹. Thus, affordability of costs (of direct costs), becomes a constraint for child schooling for poor households. Imperfect credit markets and economic inequalities aggravate the problem²⁰.

Having diagnosed the nature of the phenomenon, the following discussion elaborates on what needs to be done. Children are conceived of, in principle, to be the future citizens of the society. No doubt, parents (by biological and social relations) are the real custodians of children till they grow up as they have the prime responsibility to bring them up²¹. Alternatively, every society has certain expectations about its future generation. But when the parents do not have the means to see the children live up to the expectations of the society, it remains for the society to ensure the well-being of its future generations. According to Folbre (1994), since children are public goods, the responsibility of children's welfare and thereby their schooling rests with the society as a whole. In a welfare state, this makes a meaningful proposition. Hence, the parents have a claim to be provided with the wherewithal to educate their children.

One may also relate the theoretical base of this proposition to the Rawlsian theory of justice and Sen's Capability approach to development.

The Rawlsian theory proposes access to social primary goods for all individuals in the society. The Rawlsian social contract is interpreted as a framework for social insurance under which every member of society is insured, even from before birth against certain contingencies so that in a society built on this contract, parents as well as their children have a moral claim for support (Bojer, 2004:6). The capability approach lays the base of development in the quality of life in which the principle of individual capabilities leads to achieving valuable functioning²² (i.e. what a person is capable of being and doing) is of prime importance. The concepts of capabilities and social primary goods are related (Bojer, 2004:9). Given the persistence of inequalities and the deprivation in the society, the role of the state is imperative to ensure social primary goods and to achieve such capabilities. Therefore, in the present discussion of children, the present and future capabilities of children must be the targets of the state policies. As a matter of fact in many societies child schooling assumes policy emphasis. The Constitutional commitment of India to the provision of free and compulsory elementary education to all children below 15 years of age, implicitly recognises the public good nature of elementary education (Tilak, 2002).

In the policy perspective, it is assumed that the state has the obligation to deliver the educational services. The supply (provision) of schooling is a necessary but not a sufficient condition for ensuring universal child schooling. There are three mechanisms by which the levels of child schooling may be improved: Provision, Enforcement and Enabling Conditions. The provision of facility/service not only meets manifested demand²³ but also has the capacity to transform latent demand²⁴ into manifested demand through demonstration effect, persuasion and role modelling. The enforcement keeps the obligation on the parents to send their children to school; it is very important especially in the case of non-altruistic parents. However, these two mechanisms are not enough to meet universalisation of schooling. Under the circumstances, and given the costs (direct and indirect) of schooling,

the parents' willingness and ability to educate their children matters. When they are not willing due to one reason or the other, the state ought to intervene and thereby compel them to send their children to school. If they are not able to afford the costs, then it must be the state's responsibility to support them. Therefore, the need for the enabling mechanism lies beyond the policy realm of education as such.

It is said that 'when the children live with their parents the material comfort of children is no different from of their parents so that there will be inequalities among children implied by inequalities among the adult/parents' (Bojer, 2004:9). In case of child schooling it implies that inequality in educational opportunities of children is associated with socio-economic inequalities among the parents. Hence the policy target must be to reduce the inequalities as a whole in the society. Moreover, when children are seen as public goods, parents should be compensated in their effort for raising children and families having children should be guaranteed the means to obtain a minimum income above the poverty line' (Folbre, 1994:89). It implies that the state needs to ensure parents of the means to educate their children. It boils down to the provision of socio-economic security especially among the poor.

It was assumed that in the development process, growth itself would ensure the social security for a wide spectrum of people when the fruits of growth trickle down. This type of strategy is called growth-led strategy for social security (Sen and Dreze, 1999). Nonetheless, in many developing countries such as in India, growth alone could not ensure social security. Therefore, the need for state-led (promoted) strategy for social security becomes imperative (Sen and Dreze, 1999). In the Indian context, however, the state-supported social security arrangements are mostly concentrated for labour in the organised sector accounting for only 10 per cent of the total workforce, the rest 90 per cent of the workforce remaining deprived of any such well-defined arrangements. No wonder, almost all the deprived children in the country are found in

households engaged in the unorganised sector employment. Hence, social security arrangements are imperative and thus need to be extended to the wide spectrum of the unorganised sector as well.

VI. Conclusions

In the rights perspective, considering education as the basic right of the children, all out-of-school children are referred to as educationally deprived children. In this context, the present paper has attempted to bring out the levels of educational deprivation of children in India as a whole and across states and the changes that took place during 1990's. In the process we have constructed a simple deprivation index and social group-inequality adjusted deprivation index. Then, based on the analysis of household characteristics of the educationally deprived children, an attempt was made to draw few policy inferences.

It is observed that the levels of schooling in India fall short of the Constitutional dictum of universalisation of elementary education, even after more than half a century of promise; where around one-fourth of the children in the age group 5-14 still remain out-of-school. Across states there exist wide variations in the level of educational deprivation of children. Kerala and Bihar represent the two extremes in the incidence of educational deprivation of children. Our analysis of deprivation levels across mutually exclusive social groups of children indicates that the difference in the levels of deprivation across social groups declined but their relative positions in the ladder are intact. Our decomposition method measuring change with respect to decline in the incidence of deprivation indicates that the reduction in group-inequality claims the major share of the change during the period.

Household characteristics of the deprived children indicate that caste, adult literacy (especially females), occupation and poverty play important roles in the determination of their schooling status. In other words, children belonging to socially backward communities like ST,

SC, to households with all adults illiterate and to households of very low expenditure groups are relatively the most disadvantaged in terms of schooling. Children belonging to agricultural labour households in rural areas and to casual labour households in urban areas are the prime victims of the deprivation. Finally, it is observed that the phenomenon of educational deprivation of children is more a rural than an urban phenomenon and that it has a strong bearing with agrarian economy.

Following the supply-demand framework for schooling one may say that the levels of schooling at the national, state or regional levels depend upon the supply and demand factors with respect to schooling. Though the supply (in terms of availability, access and quality of schooling) factor is necessary positive condition, it is not sufficient to realise the goal of universalisation of elementary education in India. The demand for schooling, which is conditioned by the socio-economic characteristics of the households/community/regions, raises several concerns in terms of inequity and deprivation. The problem of affordability of costs (indirect and direct) of schooling raises the need for economic security arrangement for the needy. Finally, any remedial policy needs to emphasise not only the provision of schooling but also the provision of the required means at the hands of all for the parents for attainment of the goal of *universalization of elementary education*.

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Notes

- 1 They worked out how the society should be and what are the rights and obligation of each member following the principles of freedom, equality and justice. There are variations in the approach and conceptual framework across different schools of thought (see Sen, 1992). Based on these normative principles there are assessment and evaluations of the society in terms of to what extent the particular society in question is accommodating these principles.
- 2 The Rawlsian social contract is interpreted as a framework for social insurance where every member of society is insured from before birth against certain contingencies so that in a society built on this contract (Bojer, 2004).
- 3 For instance see (Schultz, 1961&64; Dasgupta, 1993; UNCRC, 1989) for importance of education in the perspective of human capital, human development and human rights. Also See (Sen 1995)
- 4 Article 45 of the Constitution of India declares that the state is obliged to provide free and compulsory education to all children up to the age of 14 years. And this was a goal proposed to be achieved by the year 1960. Article 26 prohibits the employment of persons below 14 years of age. Moreover, India ratified many of the international conventions related to child labour and child schooling. Universalisation of elementary education is reiterated in the Education Commission (known as Kothari commission) report of 19665, the National Educational Policy of 1986 and the 1992 Programme of Action.
- 5 The points put forward are the following. *Firstly*, it implies that child labour and schooling are mutually exclusive activities; thus it considers school-going children as not working. There is evidence, however, that school-going children are often also working. *Secondly*, there are children who are disabled or unhealthy. One cannot say that these children are working. *Thirdly*, the parents' perceptions of the age at which a child should be sent to school may differ. Several parents reported in a survey that the child (especially younger one) was not attending school because it was too young to do so. In the light of the parents' perception, it is doubtful whether they keep the same child in work. *Fourthly*, the cause and consequence relationship between child work and child schooling is a matter of concern. It is presumed that child work is the cause and educational deprivation is the consequence. The presumption has limited validity in the light of the fact that for some children, child work is

default activity. In this case it the educational deprivation of the children that throws them into the realm of work. Given these considerations we defined all out-of-school children as *educationally deprived children* rather than child labourers (see Venkatanarayana, 2004a&b).

- 6 It is agreed that all out-of-school children are deprived of education which is their basic right (UNCRC, 1989). In this rights framework, one may justify referring all out-of-school children as educationally deprived children.
- 7 In fact, the children themselves are not decision-makers of their schooling; rather it is their parents take the decision. Hence, child schooling depends upon the parents' demand for their children's schooling.
- 8 The provision of schooling remained with the state's responsibility. Supply of schooling has two roles: *Firstly*, meeting the manifested demand (of those parents who are aware of the value of education and are willing to send their children for schooling); *Secondly*, as the supply has the character of inducing the demand, supply of schooling may inculcate (through role modeling, teacher's interactions with parent's etc.,) demand for schooling by motivating parents.
- 9 See Technical Appendix of HDR (1997)
- 10 The sub-population groups of children are: 1. Rural SC/ST Male; 2. Rural SC/ST Female; 3. Rural Other Male; 4. Rural Other Female; 5. Urban SC/ST Male; 6. Urban SC/ST Female; 7. Urban Other Male; and 8. Urban Other Female.
- 11 Effective literacy takes into account the positive externality of education and it is measured with proximate literacy (see Basu, Foster and Subramaniam, 1999).
- 12 For instance see (Krishnaji, 2000; Sinha, 2000; Bhatta, 1998; Lieten, 1999; Basu, 1999; Basu and Van, 1995; Weiner, 1994).
- 13 The estimated figures are based on NSSO (1999-2000) 55th Round EUS.
- 14 Correspondingly, the discontinuation rates or drop out rates remained high for the landless, the rates declining with the size of the land holdings (NCAER, 1999 and 2001).
- 15 It means that the incidence of educational deprivation of children is high among landless labour households followed by size class of holdings from the marginal to the large. In the semi-arid regions such as the ICRISAT Villages, child schooling significantly responds to seasonal

fluctuations due to external shocks like drought and rainfall failures (Jacoby and Skoufia, 1997). In contrast, the historical experience especially of south India, also gives evidence of the relationship between agrarian economy and educational development. For instance in Kerala, agricultural development especially commercialisation and land reforms were one of the catalyst factors for educational achievements (see Tharakan, 1984). It is also evident in Andhra districts (Telugu-speaking districts) of the colonial Madras Presidency (see Washbrook, 1973; Upendranath, 1994). Moreover, Banerji (2003) observed that (Positive) changes in agrarian economy raised the demand for modern education.

- 16 Rural life is characterised by hardship and great insecurity especially for the labouring poor. Day-to-day search for livelihood keeps nothing in reserve for them to tide over a crisis. They encounter odds against taking a long-term view of life and planning for the future, hence for the future of their children. Thus, child labour is a household's short-run strategy against income instability, though child education is a long-run welfare and economic security measure of the household. Given the income vulnerabilities, the long-run welfare is forgone for short-run security. Interruption, reduction or loss of earnings arising from contingencies such as unemployment, underemployment, low wages, low prices, failure to find the market for the produce, old age, ill-health, sickness, disability etc. are the situations which call for social security. The low levels of institutional development for social security provisions ensure the continuation of the problem of child deprivation.
- 17 It is observed that fluctuation in income which is a characteristic of the agrarian economy, disturbs the consumption pattern and interrupts the continuation of child schooling leading to dropping out of school. In the absence of a proper credit market to smoothen consumption, child deprivation persists (See Jacoby and Skoufias, 1997).
- 18 Children work in different forms: *Firstly*, in a labour market for wages to supplement family income for livelihood (*income earning*); *Secondly*, to supplement family labour in household farms or enterprises or substitute adult labour in the household production activities to relieve them to the labour market for wages (*income generating*); *Thirdly*, in household chores to supplement labour or to relieve adult labour for market (*income saving*). As a matter of fact a few children participate in the labour market for employment, the majority of them being engaged in subsistence activities or household farms (see Jodha and Singh, 1991; Hirway, 2002).

- 19 It is observed in the literature that the costs incurred by parents of school going-children, especially of children enrolled in public school are not insignificant (see PROBE, 1999; Tilak, 1995; Krishnaji, 2000).
- 20 see Basu and Van, 1995; Basu, 1999; Baland and Robinson, 1999; Krishnaji, 2000; Ranjan, 2000; Ray, 2000 & 2001
- 21 For illustration on the paternalism of children in 'liberal' perspective see Gutmann (1980).
- 22 “... the alternative combinations of things a person is able to do and be – the various functioning he or she can achieve’ (Sen, 1993: 30 quoted from Bojor, 2004).
- 23 i.e. of those parents who are aware of the value of education so that they are willing to send their children to school and they can afford cost especially the opportunity cost of schooling.
- 24 i.e. of those parents who have school-age children but not sending them to school at the moment – these children are having the potential to become school children.

Appendix : I

Group-inequality Adjusted Deprivation Index and its Decomposition

The ordinary deprivation index is sum of the deprivation levels in each given their share of population as weight.

H = Number of deprived children/ total child population or $H = \sum Q_i * H_i$

H - Index value representing 'educational deprivation of children' and it is analogous with head count ratio of poverty; Q_i – Population share of 'i'th group as a weight ; H_i - 'i'th group-specific incidence

H^* - Social-group inequality
adjusted index of deprivation
Here it must $\alpha > 1$ so we have
taken $\alpha = 2$

$$H^* = \{ \sum Q_i * H_i^\alpha \}^{1/\alpha}$$

To find the variation (i.e. C^2) in the levels of deprivation across the social groups

$$C^2 = [1/H^2 * \{ \sum Q_i * H_i^\alpha \}^{1/\alpha}]$$

Then to get the inequality
co-efficient (I):

$$I = [1 + C^2]^{1/\alpha}$$

The change during 1990's can be seen as

$$\partial H^* = H_t^* - H_{t+1}^* = H_t^* I_t - H_{t+1}^* I_{t+1}$$

∂ = change; t – the initial year (i.e.1993-94); $t+1$ – the later year (i.e.1999-2000)

To decompose the change

$$1 = - [(H_t^* \partial I / \partial H^*) + (I_t^* \partial H / \partial H^*) + (\partial H^* \partial I / \partial H^*)]$$

The first term (i.e. $H_t^* \partial I / \partial H^*$) in the equation reflect the change during the period due to the change in the mean, the second term indicates the change due to reduction in group-inequality, and the third one is the interaction term.

Appendix II

Relative Disadvantage Index

First of all one has to create 'n' number of mutually exclusively group based on particular social or economic characteristics (for example Caste: SC ST and Other). The formula is :

$$RDI = \frac{(C_i - S_i)}{((C_{i\max}) - S_i)} \quad i = 1 \dots n$$

$$C_i(\max) = S_i / AD \quad \text{if } S_i < AD$$

$$C_i(\max) = 1 \quad \text{if } S_i > AD$$

$$AD = \sum S_i * DC_i$$

DC_i – 'i' th group specific incidence.

C_i – share of 'i' th group in total deprived children; S_i - share of 'i' th group in child population

C_imax- Maximum contribution that 'i' th group can make; AD – all groups average incidence.

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